

REMARKS

Upon entry of this amendment, which amends Claims 1, 13, 14, 17 and 20, and adds Claims 35-49, Claims 1, 13-17, 19-24, 29, 31-49 remain pending. In the July 11, 2003 Office Action, Claims 17 and 20 were rejected under 35 U.S.C. § 112, Second Paragraph, as being indefinite. Claims 1, 13-17, 19-23, 29 and 31-33 were rejected under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 5,414,894 to Bisaro et al. (hereinafter referred to as "Bisaro et al."). Finally, Claims 24 and 34 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Bisaro et al. in view of U.S. Patent No. 3,742,318 to Yamashita (hereinafter referred to as "Yamashita"). Applicant respectfully requests reconsideration of the claims in view of the above amendments and the comments below.

35 U.S.C. § 112, Second Paragraph, Rejections – Claims 17 and 20

In the Office Action, Claims 17 and 20 were rejected under 35 U.S.C. § 112, Second Paragraph, as being indefinite. While Applicant does not necessarily agree with the grounds for these rejections, amendments to Claims 17 and 20 have been made, which Applicant believes remove any indefiniteness issues relating to these claims. Applicant respectfully requests, therefore, that the § 112 rejection of Claims 17 and 20 be withdrawn.

35 U.S.C. § 102(b) Rejections – Claims 1, 13-17, 19-23, 29 and 31-33

In the Office Action, Claims 1, 13-17, 19-23, 29 and 31-33 were rejected under 35 U.S.C. § 102(b), as being anticipated by Bisaro et al. For the following reasons, Applicant respectfully disagrees.

Independent Claim 1 of the present application includes a “joining means” element, which is recited to be comprised of “a layer of microcavities”. As explained in a prior March 24, 2003 Amendment and Response, Bisaro et al. do *not* disclose a joining means having *microcavities*. Rather, Bisaro et al. teach the creation, by implantation, of *perturbation zones* at an *atomic scale*. These perturbation zones, as explained, for example, in lines 14-20, column 2 of Bisaro et al., can take on three different forms: (1) anchoring points (corresponding to vacancies, repelled atoms of the crystal, punctual defects of the crystalline lattice due to implantation); (2) zones of stresses (for example induced by the insertion, in the crystalline lattice, of an atom with a big size such as Ar); or (3) an amorphous zone of the material corresponding to a rupture of the crystalline order. These perturbation zones may prove useful to trap or absorb dislocations. However, they are *not* microcavities, as that term is meant in the present application.

Unlike Bisaro et al., the presently claimed invention is a *macroscopic* approach aimed at creating a layer of defects (e.g. microcavities or roughness at a bonding interface) of sufficient size to allow the physical decoupling of the substrate and epitaxial layer to be grown on the thin layer and thereby render the induced stresses less important.

Contrary to the assertions made in the Office Action, implantation does not necessarily lead to the formation of microcavities. Indeed, in Bisaro et al. it does not.

Microcavities can only be created under very specific dose conditions. As explained in detail in the specification of the present application, under appropriate dose conditions implantation leads to the creation of platelets, which are lenticular objects having thicknesses of about one or two atomic layers and lengths of a few nanometers or more. Heat treatment is used to obtain microcavities from the platelets. Such microcavities have a length of a few tens of nanometers or more.

Bisaro et al. discuss implantation using Ar ions. Considering the weak implantation dose disclosed and the large size of the implanted Ar ions, one of ordinary skill in the art would readily understand that platelets cannot be created, much less microcavities, using such dose conditions. It should also be pointed out that Bisaro et al. does not teach using a heat treatment to obtain microcavities from platelets.

For at least the foregoing reasons Bisaro et al. does not teach a compliant substrate having a "joining means" comprised of "a layer of microcavities". Applicant respectfully requests, therefore, that the § 102 rejection of independent Claim 1 be withdrawn.

The other rejected claims all depend from independent Claim 1. Accordingly, as independent Claim 1 appears to be allowable over Bisaro et al., the dependent claims should also be allowable as depending from an allowable base claim. Applicant

respectfully requests, therefore, that the § 102 rejections of the rejected dependent claims also be withdrawn.

35 U.S.C. § 103(a) Rejections – Claims 24 and 34

In the Office Action, claims 24 and 34 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Bisaro et al. in view of Yamashita. Claims 24 and 34 both depend from independent Claim 1, which as explained above, is believed to be allowable over the prior art of record. The addition of Yamashita does nothing to alter this fact. Accordingly, Claims 24 and 34 are believed to be also allowable over the prior art of record, and Applicant respectfully requests that the § 103 rejections of these claims be withdrawn.

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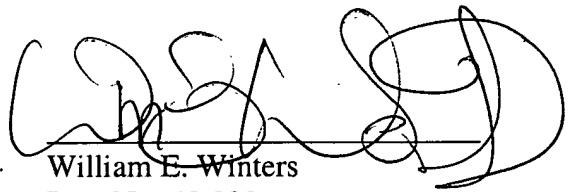
CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 408-282-1857.

Respectfully submitted,

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William E. Winters
Reg. No. 42,232

THELEN REID & PRIEST LLP
P.O. Box 640640
San Jose, CA 95164-0640
(408) 282-1857 Telephone
(408) 287-8040 Facsimile